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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/618,765	07/15/2003	Kazuaki Sumita	0171-0991P	6014
2292	7590	12/20/2006	EXAMINER	
BIRCH STEWART KOLASCH & BIRCH PO BOX 747 FALLS CHURCH, VA 22040-0747			SELLERS, ROBERT E	
		ART UNIT	PAPER NUMBER	
		1712		

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	12/20/2006	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	10/618,765	SUMITA ET AL.	
	Examiner Robert Sellers	Art Unit 1712	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 29 November 2006.
- 2a) This action is FINAL. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1 and 8 is/are pending in the application.
 - 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) Claim(s) _____ is/are allowed.
- 6) Claim(s) 1 and 8 is/are rejected.
- 7) Claim(s) _____ is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) <input type="checkbox"/> Notice of References Cited (PTO-892)	4) <input type="checkbox"/> Interview Summary (PTO-413)
2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)	Paper No(s)/Mail Date. _____.
3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)	5) <input type="checkbox"/> Notice of Informal Patent Application
Paper No(s)/Mail Date _____.	6) <input type="checkbox"/> Other: _____.

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1. The 35 U.S.C. 112, second paragraph, rejection is rescinded due to the deletion of the term "type" from the denotation of the bisphenol epoxy resin in claim 1, line 2.
2. The aromatic amine curing agent (B) would be more concisely defined if the language "selected from the group consisting of" is employed in the denotation of the aromatic amine compounds of formulae (1) to (3).

The text of section 103(a) of Title 35, U.S. Code not included in this action can be found in the non-Final rejection mailed September 22, 2005.

Claim 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over Japanese Patent No. 64-65120 (Japanese '120).

Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Japanese '120 as applied to claim 1 hereinabove, and further in view of Japanese Patent No. 10-231351 (Japanese '351).

The rejections are maintained for the reasons of record set forth in the previous Office actions. The arguments filed November 29, 2006 have been considered but are unpersuasive.

3. The newly claimed molar ratio has been limited to from 0.8:1 to 0.85:1 as supported by page 15, Table 1, Examples 1-5 and page 7, line 19, respectively. The closest prior art of Japanese '120 discloses an equivalent ratio of epoxy resin to aromatic amine of from 0.9:1 to 1.1:1 overlapping the originally claimed range of from 0.7:1 to 0.9:1.

According to MPEP § 2144.05, Obviousness of Ranges, I. Overlap of Ranges, “*a prima facie* case of obviousness exists where the claimed ranges do not overlap but are close enough that one skilled in the art would have expected them to have the same properties, *Titanium Metals Corp. of America v. Banner*, 227 USPQ 773 (Fed. Cir. 1985).” One skilled in the art would have expected the equivalent ratio of 0.9:1 of Japanese ‘120 to have the same toughness K_{1c} as that of the claimed parameters as evidenced in the Sumita declaration filed January 23, 2006. A comparison between Examples 7 and 8 in Table A wherein the types and amounts of the other components are close and the epoxy resin:amine curing agent molar ratios are 0.8:1 and 0.9:1 and show K_{1c} values of 4.2 and 4.1 $\text{Mpa}^{\frac{1}{2}}$, respectively, both meeting the newly claimed K_{1c} limits of at least 4.0. (It is assumed that both examples contain 30 parts by weight of C-100S diethyldiaminodiphenylmethane although no values are indicated in Table A.

4. There is no data substantiating the criticality of the claimed molar ratio range over the closest prior art minimum, especially considering the originally acceptability of the prior art ratio of 0.9:1 and the lack of testing of the claimed maximum of 0.85:1 most closely resembling the prior art ratio. Furthermore, the evidence is not commensurate in scope with the claims regarding a lack of experimentation at the claimed maximum of 0.85:1 as well as a representative sampling of the claimed aromatic amine curing (B) including the diverse species within formulae (2) and (3).

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5. Japanese '351 is relied upon as a secondary reference to establish the obviousness of employing the silica of Japanese '120 in spherical form in order to reduce the coefficient of linear expansion (translation, page 3, paragraph 10, lines 8-9). A secondary reference need not recite each and every element of the claims; otherwise it would have been applied under 35 U.S.C. 102(b). The motivation of using the silica of Japanese '120 in spherical form as taught by Japanese '351 is clearly consistent and desirable with the objectives of Japanese '120.

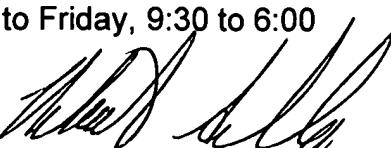
6. The silicone resin of Japanese '120 is not within the confines of the claimed alkoxy-bearing silane coupling agent and thus meets the claimed criteria of being free of such as silane coupling agent.

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

(571) 272-1093 (Fax No. 571-273-8300)
rs 12/18/2006

Monday to Friday, 9:30 to 6:00



ROBERT E.L. SELLERS
PRIMARY EXAMINER